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AMENDMENT: IN THE SPECIFICATION

Please enter the Sequence Listing into the application.

- 1. Please replace the paragraph [0018] with the following amended paragraph(s):
- [0018] 1A. Agonist-induced downregulation of opioid receptors. Cells stably expressing MOR, DOR or D MOR (~1-2 pmol/mg) were treated with agonist (10 μM DADLE, an opioid peptide having the sequence Tyr-D-Ala-Gly-Phe-D-Leu; SEQ ID NO:7; Sigma, St. Louis, MO) for 3 hours or left untreated. Cells were then chilled on ice, washed extensively and total opioid radioligand binding sites were determined for each cell line (16). Both DOR and D MOR showed significant downregulation whereas MOR was not substantially downregulated under the same conditions (p<.001). Error bars represent s.d. from a representative experiment (n=3 experiments), with each data point derived from triplicate determinations.
- 2. Please replace the paragraph [0113] with the following amended paragraph(s):
- [0113] The invention also provides GASP polypeptides. A GASP polypeptide of the invention includes a GASP amino acid sequence, i.e., an amino acid sequence that has at least about 70% identity to GASP SEQ ID NO:2 (GASP1) or GASP SEQ ID NO:6 (GASP2) over a comparison window of at least 15 contiguous amino acids. GASP SEQ ID NO:2 (GASP1) is the amino acid sequence of a GASP polypeptide described in detail in Example 1. The nucleic acid and (single-letter code) amino acid sequences of these polypeptides are given below.

## GASP1 Nucleic Acid Sequence

atgactggggcagagattgagtctggtgcccaggtcaagcctgaaaagaagcctggggaagaggttgtaggtggggctgagatagagaa tgatgtccctctggtggtcagacccaaggttaggacccaggcccagataatgcctggggcaaggcccaagaataagtccaaggttatgcct ggagcaagcaccaaagttgagacaagtgcagtgggtggggcacgccctaagagtaaggccaaggcaatacctgtttcacgatttaagga agaagcccagatgtgggctcagcccaggtttggtgctgaaagattgtctaagacagagagaaactcccagaccaatatcatagcctctcca cttgtcagtactgattctgtgttgctaaaacaaagtacctgtctgaggatagagaactggttaatacagacactgagagctttcctagaag gaaggcccattaccaagcaggattccagccttcttttaggtcaaaggaggagaccaatatggggtcctggtgctgtcctaggcctacatcca aacaagaagcctctcctaattctgatttcaaatgggtagacaaatctgtgagttccttgttctggagtggagatgaggtcactgcaaaatttcatc

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ctgggaatagggtaaaagacagtaacagatccatgcacatggccaatcaagaggctaataccatgtctaggtcccaaactaaccaggagct ctatattgcatctagttctgggttctgaggatgagtctgttaagacacctggttctgggccagagataaaaccaatacctggtctgggcccagg gaag at ccca at ag cagg to cagg tit agg to taagaa ag aag to tat git gaat caag tict gaat ctg ag cat gaag accatt tig gag to ct gaag to can be considered as a support of the considered again to consider a gaag to cause of the considered again to consider a gaag to cause of the considered again to consider a gaag to cause of the considered again to consider a gaag to cause of the considered again to consider a gaag to consider aggtttggggctggaaaggaggcaaattcaggtccaaaatgagagctgggaaggaggccaataacagggccaggcaaggccaagc gagaagcttg cattgattt catgcctgggt ctatagatgtaattaaaaaagagtcctgtttctggcctgaagaaaatgctaataccttttcaaggccagg t cag agg agg agg content t gg gacct gg tt ctg gg ctacag agg t cag cat gg cag at gaag ccag cat agagt ccag to the content to the contena aggact gat ggg agc gt at t ggt gat t cett at t t gg ggc t ag ggaaa agac cag t at gaaa act gg gg c t ga gg c cacct c t gaat c tall a sea of the sea oftactag cagct gat gat gaa caggt cattat t ggt to t gg to t gg to a gag gg to a accaa gag gc t gag gaa gag accatt t t t g to the contract of thcattggtccctggttttggtctggagaacaagttgatatagaggctggaatcggagaagaggccaggccaggagctgaagaagaagacaatattcgggtcctggttttgggctgaaaaccagacctatatggattgtagggctgaaactagctgtgacaccatgcaaggggctgaggaggag gagcccattattgggtcctggttttggaccagagtagaagcttgtgtggagggtgatgtcaacagcaagtctagcctggaggacaaggaag aggccat gataccat gtttt ggagccaa agaa gaggtcagtat gaagcat ggact ggtgtcagat gcagat ttat ggcagggct gaggaand gaggact gaggagga catt gt caatt cgt ggt cct ggt acagaaaata cacaaag ccagaag gccatt at agggt cct ggt tat ggg ctacagaag agaag agaa acagaag ggc catt at agggt cct ggt tat ggg ctacagaag agaag agaa acagaag agaa acagaag gg ccatt at agggt cct ggt tat ggg ctacagaag agaag agaa acagaag acagaag agaa acagaag atatagatgggactggagaaaaggccaagttactgactgaagaggagaccataatcaattcctggttctggaaagaagatgaagccatttcagaggctact gacagagagagatccaggccagaagctgaggaggaggagacattgttggttcttggttcttggctggagaagaggacagactagccagtccggaggcagtggcaggagtcggctttgagtcaaagcctgggactgaggaggaagaaatcactgttgggtcctggttctggcct gaagaagaagccagtatacaggctggatctcaggcagtagaggaaatggagtcagagactgaagaggaaaccatttttgggtcctggttctgggatggaaaagaagtcagtgaagaagcaggaccatgctgtgtatccaagccagaggatgatgaagaagatgattgttgagtcctggttctggtctagagacaaagccattaaggaaactggaactgtggccacctgtgagtccaagccagaaaatgaggaaggggccattgttgggtcttg gtttgaggctgaagatgaggtagataacaggactgacaatggaagcaactgtgggtccaggacattagctgatgaagatgaggccatagtg gggtcctggttctgggcaggagatgaggcccattttgaatcaaatcctagccccgtgttcagggccatttgcaggtccacgtgttcagttgaa 

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## GASP1 Amino Acid Sequence

YWTFFVTCTMTGAEIESGAQVKPEKKPGEEVVGGAEIENDVPLVVRPKVRTQAQIMPG ARPKNKSKVMPGASTKVETSAVGGARPKSKAKAIPVSRFKEEAQMWAQPRFGAERLSK TERNSQTNIIASPLVSTDSVLVAKTKYLSEDRELVNTDTESFPRRKAHYQAGFQPSFRSK **EETNMGSWCCPRPTSKQEASPNSDFKWVDKSVSSLFWSGDEVTAKFHPGNRVKDSNRS** MHMANQEANTMSRSQTNQELYIASSSGSEDESVKTPWFWARDKTNTWSGPREDPNSRS RFRSKKEVYVESSSGSEHEDHLESWFGAGKEGKFRSKMRAGKEANNRARHRAKREACI DFMPGSIDVIKKESCFWPEENANTFSRPMIKKEARARAMTKEEAKTKARARAKQEARSE EEALIGTWFWATDESSMADEASIESSLQVEDESIIGSWFWTEEEASMGTGASSKSRPRTD GERIGDSLFGAREKTSMKTGAEATSESILAADDEQVIIGSWFWAGEEVNQEAEEETIFGS WFWVIDAASVESGVGVSCESRTRSEEEEVIGPWFWSGEQVDIEAGIGEEARPGAEEETIF GSWFWAENOTYMDCRAETSCDTMQGAEEEEPIIGSWFWTRVEACVEGDVNSKSSLEDK EEAMIPCFGAKEEVSMKHGTGVRCRFMAGAEETNNKSCFWAEKEPCMYPAGGGSWKS RPEEEEDIVNSWFWSRKYTKPEAIIGSWLWATEESNIDGTGEKAKLLTEEETIINSWFWK EDEAISEATDREESRPEAEEGDIVGSWFWAGEEDRLEPAAETREEDRLAAEKEGIVGSWF GAREETIRREAGSCSKSSPKAEEEEVIIGSWFWEEEASPEAVAGVGFESKPGTEEEEITVG SWFWPEEEASIQAGSQAVEEMESETEEETIFGSWFWDGKEVSEEAGPCCVSKPEDDEEM IVESWFWSRDKAIKETGTVATCESKPENEEGAIVGSWFEAEDEVDNRTDNGSNCGSRTL ADEDEAIVGSWFWAGDEAHFESNPSPVFRAICRSTCSVEQEPDPSRRPQSWEEVTVQFKP GPWGRVGFPSISPFRFPKEAASLFCEMFGGKPRNMVLSPEGEDQESLLQPDQPSPEFPFQ YDPSYRSVQEIREHLRAKESTEPESSSCNCIQCELKIGSEEFEELLLLMEKIRDPFIHEISKI AMGMRSASQFTRDFIRDSGVVSLIETLLNYPSSRVRTSFLENMIRMAPPYPNLNIIQTYIC KVCEETLAYSVDSPEQLSGIRMIRHLTTTTDYHTLVANYMSGFLSLLATGNAKTRFHVL KMLLNLSENLFMTKELLSAEAVSEFIGLFNREETNDNIQIVLAIFENIGNNIKKETVFSDD DFNIEPLISAFHKVEKFAKELQGKTDNQNDPEGDQEN

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## GASP2 Nucleic Acid Sequence

at gat gt ccctct ggt ggt cag accca ag gt tag gaccca gg caactact gg gg caa gg ccca aa act gag acca ag tct gt gcct gc ggcaaggcccaaaactgaggcccaagcaatgtctggggcaaggcccaaaactgaggtccaagtaatgggtggtgcaagacccaaaacgga ggctcaaggaatcacaggggccaggcccaaaaccgatgccagggcagtaggtggcgctcgttctaaaactgatgccaaggcaatccctg ctaatgccgttgcttggccactggccactgctgagtctggatcagttactaaatctaagggcctgtctatggatagagaactagtcaatgtgga tgctgaaacctttcctggcacccagggtcagaaaggaatccagccctggtttggaccaggggaggagactaatatggggtcttggtgctattagaga ca agt g t caga t cat g g c cag g g a agag t c caga t ac ag g t cag g c t a a a cat cag a cta at c cag g t cag g cac ag g c cag g cac ag g cccaga teca agea agac ctat gtt gatteet gg tet gg at et gag gat gag ge cagea acce at tet extended against a comparison of the comparison ogatgagttctataagcagtcctgggttttgcctggagaagaggccaatagtagattcaggcacagagacaaagaagatcctaatactgccttgaaactcagggcccagaaagatgttgacagtgatagggtcaaacaagaacccaggtttgaggaggaagtcattattgggtcctggttctgg gcagaaaaagaggccagtttggagggtggagcttcagcaatctgtgaatctgagccaggaactgaggagggggccattggcggatccgc gtactgggctgaggaaaagtccagtttgggggctgtggccagagaagaggccaaagccggagtctgaagaagaggccatatttgggtcctggttctgggacagagatgaggcctgctttgacctaaatccctgtcctgtgtacaaggtcagtgataggttcagagatgcagctgaggagctta atgcatcctccaggccccaaacctgggacgaggtcactgttgaattcaaacctggtctttttcatggggttggcttccgatccacaagccctt tggaattcccgaagaggcttctgaaatgcttgaggcaaagcccaagaacctggaacttagcccagaaggagaagagcaggaatctttgctt agtgcagagtctgagagttggtcctgcagctgcatacaatgtgagctgaaaattggttctgaagagtttgaagaattccttttattaatggacaa aattegggateettttatteatgaaatatetaaaattgeaatgggtatgagaagtgetteteaatttaeeegagattteattegagatteaggtgttg to to a certait gaa a a cett get ta attate cate cet cag a get a gaa a a get titting gaa a a tat gatte a categorie cacet tate ca a a tetta a cetta to categorie categacatgattgagacattcatatgtcaagtgtgtgaggaaacccttgcacatagtgtggattcccttgagcagctgactggaataaggatgcttag teaegttetgaaaatgetattgaatttgtetgaaaateetgetgtggeaaaaaaetatteagtgeeaaagetettteaatatttgtgggtetettta tgatttcagtcttgagccgcttatttctgcatttcgtgaatttgaggagttagctaagcaactacaagcccaaatagaccacaaatgatcctga ggtgggacaacaaagttaa

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## GASP2 Amino Acid Sequence

MTGAEIEPSAQAKPEKKAGEEVIAGPERENDVPLVVRPKVRTQATTGARPKTETKSVPA
ARPKTEAQAMSGARPKTEVQVMGGARPKTEAQGITGARPKTDARAVGGARSKTDAKA
IPGARPKDEAQAWAQSEFGTEAVSQAEGVSQTNAVAWPLATAESGSVTKSKGLSMDRE
LVNVDAETFPGTQGQKGIQPWFGPGEETNMGSWCYSRPRAREEASNESGFWSADETST
ASSFWTGEETSVRSWPREESNTRSRHRAKHQTNPRSRPRSKQEAYVDSWSGSEDEASNP
FSFWVGENTNNLFRPRVREEANIRSKLRTNREDCFESESEDEFYKQSWVLPGEEANSRFR
HRDKEDPNTALKLRAQKDVDSDRVKQEPRFEEEVIIGSWFWAEKEASLEGGASAICESE
PGTEEGAIGGSAYWAEEKSSLGAVAREEAKPESEEEAIFGSWFWDRDEACFDLNPCPVY
KVSDRFRDAAEELNASSRPQTWDEVTVEFKPGLFHGVGFRSTSPFGIPEEASEMLEAKPK
NLELSPEGEEQESLLQPDQPSPEFTFQYDPSYRSVREIREHLRARESAESESWSCSCIQCEL
KIGSEEFEEFLLLMDKIRDPFIHEISKIAMGMRSASQFTRDFIRDSGVVSLIETLLNYPSSRV
RTSFLENMIHMAPPYPNLNMIETFICQVCEETLAHSVDSLEQLTGIRMLRHLTMTIDYHT
LIANYMSGFLSLLTTANARTKFHVLKMLLNLSENPAVAKKLFSAKALSIFVGLFNIEETN
DNIQIVIKMFQNISNIIKSGKMSLIDDDFSLEPLISAFREFEELAKQLQAQIDNQNDPEVGQ
QS

SEQ ID NO:6

These amendments are made without prejudice and are not to be construed as abandonment of the previously claimed subject matter or agreement with any objection or rejection of record.